A BIOGRAPHICAL NOTICE

OF

HENRY CADWALADER CHAPMAN, M.D., Sc.D.

BY

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Visitors to the library of the Academy in 1868 were likely to encounter a little old man, dressed in gray. If it were a morning in winter he would be found reading the *Ledger* near the register before going on with the drawing of fossil shells on stone for the *American Journal of Conchology*.

He was an enthusiast in his specialty of fossil shells and his work will endure. His health was far from good, and he was wont to say that the compensations the years brought him were the recurring "songs of the birds and the perfume of new mown hay." It is evident, therefore, that he was a poet as well as a geologist.

His exceedingly frugal lunch would sometimes be eaten at his work table, but he frequently carried his provisions, often a few shellbarks and a pinch of red pepper, in a little basket on his arm to the Pennsylvania Hospital, where his brother was then apothecary. Here he met the young Chapman for whom he conceived a warm regard, heartily reciprocated, the friendship remaining unbroken until the death of the older man in 1877. It was a striking case of the attraction of opposites, their only traits in common being a love of Nature and an eager desire to explore her mysteries. Chapman was strongly influenced by the enthusiasm of the older naturalist. He declared, half seriously, in after years, "he is responsible for all the time I have wasted in the study of natural history." If that be true, Timothy Abbott Conrad is also indirectly responsible for the preparation of this notice, but it cannot be doubted that an important factor in determining Chapman's career, apart from his inherited bent for scientific investigation, was his devotion to Leidy.

Henry Cadwalader Chapman was born in Philadelphia in the house of his grandmother, Mrs. John Markoe, 1617 Walnut Street,

August 17, 1845. He was the son of George W. Chapman, a lieutenant in the United States Navy, and grandson of Dr. Nathaniel Chapman, who, coming from Virginia in the autumn of 1797, had married Miss Rebecca Biddle, a daughter of Colonel Clement Biddle, Commissary General of the Continental Army. In 1813 Dr. Chapman became associated with the Medical Department of the University of Pennsylvania, with which he was connected continuously until 1853, as Professor of Materia Medica, the Theory and Practice of Medicine, and of Clinical Medicine.

Henry's mother was Miss Emily Markoe, the daughter of John Markoe, and granddaughter of Abraham Markoe, the first Captain of the Philadelphia City Troop. She and her family were remarkable for their wit and humor, and her son amply inherited both. His character in early life, and indeed up to the last, was somewhat of a contradiction. While thoroughly enjoying the diversions so liberally supplied by his social position, he early manifested an interest in chemistry and physics. His genial and joyous nature made him one of the most attractive of boys, and as a young man his society was sought by many older than himself. These attractive qualities persisted, with no sign of diminution, throughout his mature years.

His early education was received at the Faires Classical Institute, then located at No. 238 Dean Street, now officially Camac Street, but coming to be known popularly as Club Alley. The Institute was at the time the most exclusive, as well as one of the best, schools in Philadelphia.

The Rev. John W. Faires, Principal of the Institute, became an instructor of boys in 1831, his first pupils being William Cadwalader, later a member of the Academy, and his cousin J. Williams Biddle. During a period of more than fifty years Dr. Faires had a successful career as a teacher, his alumni including many of the most distinguished men of the city and state. He was a strict disciplinarian and he held unflinchingly to the doctrine that to spare the rod was to spoil the child. The daily floggings which took place in the presence of the higher classes, and of which Henry Chapman, because of his love of fun and impatience of discipline, received his full share as the penalty of his larks, would be regarded now, when the independence of "the little child" is held to be the paramount interest of society, as not far short of brutal. The master had a collection of rattans in his desk adapted to the size and age of the culprits, and as he made his selection for the particular one in hand and bent it to test its elasticity, the boy enjoyed a few moments of anticipation of what was coming to him. The punishment was, however, rarely or never resented, the master's sense of justice and his desire to make boys truthful and honest being fully recognized. While fighting and disorderly behavior, even at recess, were forbidden, the Doctor realized that the best way for the boys to settle some of their differences was for one or the other to secure a black eye or a bloody nose, before he descended in his wrath to stop the combat. The students of the school at the period referred to were the best prepared of those applying for admission to the University, to Princeton, or to other colleges, and for a time the first honor man in every class in the University was a Faires Boy. If the school could be said to have a specialty it was careful instruction in Latin and Greek.

These were the influences under which Chapman was prepared for the Department of Arts of the University of Pennsylvania. Those who knew him in after years will readily believe that Dr. Faires was sincere when he declared that he had never had a more brilliant scholar on the roll of the school. The originality and mental acuteness of the boy were early apparent. He was, however, far from being a diligent or attentive student, his tendency to regard the world from a humorous point of view leading him into the difficulties encountered by all such youths. They are nearly always loved, although sometimes dreaded, by the teacher.

The classes in the College, or the Department of Arts of the University of Pennsylvania, which he entered in 1860 from this preparatory school, occupied the upper of the two buildings on 9th Street between Chestnut and Market Streets, the site of the mansion built in 1800 as the residence of the Presidents of the United States. The faculty was small, as was also the attendance, which was quite local as compared with the present cosmopolitan enrollment in West Philadelphia. The men who filled the Chairs, however, were of the first rank in their specialties and it was a great advantage to the student to come into direct relation with the professors themselves, there being at that time no assistants or tutors. Henry Vethake, John F. Frazer, George Allen, Henry Coppée and Provost Goodwin, with the remarkable mathematician, E. Otis Kendall, were the equals, and in many respects the superiors, of the teachers in other institutions.

The students all lived in their own homes. The system of instruction practiced in the school was well adapted to produce educated, efficient and honorable men, provided with the requirements of active life as well as with the accomplishments of the scholar. Social grades were sharply marked, much more so than at present. The

members of the college fraternities were thrown into the closest intimacy, and life-long friendships were formed through them. Chapman belonged to the Delta Phi, first established in the University in 1849. He never cared greatly about athletics, which occupied no such prominent place in University interests as they do now. Cricket was the game of the period, but Chapman never went in for it. He may have gone on the river, but he was not one of the College crew.

Henry graduated from the Department of Arts in 1864. He almost immediately crossed the campus and matriculated in the Medical Department, by far the most distinguished medical school in America, under the preceptorship of Dr. Addinell Hewson. Here also the teaching force was small, consisting of but seven professors: Joseph Leidy, Joseph Carson, R. A. F. Penrose, Henry H. Smith, Robert E. Rogers, Alfred Stillé and Francis Gurney Smith, but these were the worthy successors of the men who had brought the school to its distinguished position and they more than maintained its brilliant record.

As in school and college, Chapman sustained the easiest relations to the medical curriculum, frequently missing lectures but always, after a few hours' reading, acquitting himself at quiz as well as the most studious of his classmates. He took his degree of Doctor of Medicine in 1867, the subject of his thesis being *Generation*.

He entered the Pennsylvania Hospital the same year, first as an attaché of the apothecary shop and later as a resident physician,

¹ I am much indebted to Mr. John Cadwalader for these recollections of the young Chapman, of the Faires school, and of the College before the removal to West Philadelphia. In his reminiscences of the school Mr. Cadwalader tells one story which is now of more than local interest. "A big, well built boy of about fifteen years of age, named Irvine Stephens Bulloch, was then in the second class. It was unusual for the Doctor to flog a boy of this size, as he realized it imposed too severe a humiliation on him. Bulloch was usually a good student, but he sat behind a very offensive boy whom he felt it his duty to constantly chastise. This he did by giving him, from time to time, a loud smack in the face which could be heard throughout the school. The victim, quite as big as Bulloch, would set up a howl without attempting to resent the blow. The sympathies of the school were, as a matter of course, all with the aggressor. Dr. Faires had a warm regard for Bulloch, who was a boy after his own heart, but he had told him repeatedly his assaults must stop. Catching him one day in the act the Doctor became much enraged, as he sometimes would on due provocation. Seizing his heaviest cane he ran across the room. Bulloch escaped to another aisle, the boys guarding his retreat as effectively as possible until he reached the door, when, raising his hand, he cried: 'Dr. Faires, you cannot flog me and I do not want to fight with you. I know, of course, I will have to leave the school; so, good bye, fellows, I am awfully sorry to go.' This boy, who had come from Georgia, was the uncle of Theodore Roosevelt. He entered the Confederate Navy. was a distinguished officer, and was on the 'Alabama' in its battle with the 'Kearsage.' A portrait of him was published in the Illustrated London News soon after the battle."

which position he retained until 1869, when he went to Europe for a three years' course of study under Sir Richard Owen in London, Alphonse Milne Edward in Paris, Emile DuBois Reymond in Berlin, and Joseph Hyrtl in Vienna.

His beloved friends Leidy and Conrad being his sponsors, he had been elected a member of the Academy in 1868. For Dr. Leidy, especially, he entertained the most affectionate regard and he never lost an opportunity of acknowledging with impulsive generosity his indebtedness to the great naturalist for imspiration and encouragement. His championship of his friend, who never answered criticisms or decried injustice, was amusingly illustrated by a note to the American Naturalist in which he calls attention to the fact that Wyville Thomson, in his remarks on sponges, had neglected to state that Leidy was first to correctly describe the natural position of Hyaloncma, Euplectella and Pleuronema, concluding with the remark: "We trust that Prof. Thomson will now gracefully throw up the sponge."

Immediately on his return from Europe he applied himself to the problems of evolution, in which he was deeply interested. The result of his reading, for the most part in the library of the Academy, was the publication of his first work, a volume of 193 pages entitled *The Evolution of Life*. It was issued from the press September 17, 1872, although the title page is dated the following year.

So assiduously had he devoted himself to the preparation of the work that his health broke down and he was compelled to go abroad immediately after placing the manuscript in the hands of his publishers, the preface being prepared in Paris. The proofs were corrected and the index prepared by the Librarian of the Academy to whom he had entrusted the pleasant duty of seeing the book through the press.

The introduction is an interesting resumé of the history of the doctrine of evolution. He acknowledges his special indebtedness to Prof. Hyrtl, Dr. Friedlowsky, Dr. Klein of Vienna, Prof. Owen, Mr. Flower of London, Prof. Gervais of Paris, and to his friends Drs. Leidy and James Aitkin Meigs, for encouragement and advice during the progress of the work.

Although the book gives evidence of extensive reading, it is believed that Dr. Chapman regretted later that he had not waited until his judgment was more mature. The work, in common with nearly everything published by the author subsequently, was written literally currente calamo and showed evidences of impatience of the restraints of composition, punctuation, especially, being regarded

as an impertinent artificial device, which might for the time be safely ignored. His attention having been once called by the Editor of the Proceedings, to the absence of punctuation marks in his manuscripts, he replied, "Well! I will write a lot of commas, colons and semi-colons and you may scatter them about as you please." Some revision of diction and careful proof-reading were always, in fact, necessary in connection with Chapman's literary work, not from mere carelessness, and still less, it is scarcely necessary to say, from incapacity, but because of a controlling desire to be rid of what was in hand as promptly as possible so as to be free to go on with some other task which had, in the meantime, established itself as of dominant interest.

Dr. Chapman's first contribution to the Proceedings of the Academy was a report of remarks made at the meeting of 1873 on a species of Delphinus. At the meeting of November 25 of the same year he acknowledges his indebtedness to the Directors of the Zoological Garden for the opportunity of dissecting a specimen of the Musanga, the results of which he communicates verbally.

Then in the third annual report of the Zoological Society of Philadelphia, it is stated that he had made dissections valuable to the comparative anatomist and pathologist and that as a result thereof papers on certain muscles in Ateles geoffroyi and Macacus rheus and on the bloodvessels in the rete mirabile of Bradypus didactylus had been published in the Proceedings of the Academy. Subsequently his work as Prosector of the Society, to which position he had been elected in 1874, supplied him with material for contributions to the Proceedings on the omentum of the Dog-faced Monkey, on the anatomy of the Giraffe, the Elephant, the Manatee, the Capybara, the Chimpanzee, the Amphiuma, the Macacus, the Ourang Outang, the Kangaroo, the Echidna, the Hyaena, the Cryptobranchus, the Gibbon, the Chiromys, and the Armadillo.

Some of these articles were original contributions to science while others were corroborations or corrections of the results obtained by earlier anatomists. They frequently give evidence of familiarity with the classics as well as with modern bibliography.

In a detailed report to the Zoological Society in 1876 he endorses

² Dr. Chapman probably never heard of Lord Timothy Dexter, who, at the conclusion of his unpunctuated A Pickle for the Knowing Ones or Plain Truths in a Homespun Dress, supplies half a page of assorted marks with the note: ". . . . the Nowing ones complane of my book the fust edition had no stops I put in A nul here and they may peper and salt it as they plese."

the position of the managers of other Zoological Gardens that drugs are of but small avail in treating the ailments of lower animals and records it as his experience as Prosector that the principal causes of deaths during the first six months of the existence of the Garden were improper food, badly regulated temperature and ill constructed cages. He attributes the greatly improved conditions to the effects of common sense hygienic treatment, the result of careful attention and watchfulness on the part of those having charge of the animals. He then enumerates the causes of death of 74 of the 113 animals lost during the year, intimating that the others were old and in poor condition when received and that they had gradually wasted away, this being more especially the case with the birds. It is evident that he took a deep interest in the condition of the Garden and that he was not sparing of labor to advance its prosperity.

He became a Director of the Society April 28, 1881, served as Secretary in 1884 and as Corresponding Secretary from Nov. 24, 1890 to Nov. 10, 1904.

From other sources he obtained the material for his elaborate studies of the Gorilla, the Hippopotamus, the Galeopithecus and the Hyrax.

As a contribution to the eighth volume of the quarto Journal of the Academy, he published in 1881 his account of the placenta and generative apparatus of an elephant belonging to Cooper and Bailey's London Circus, then occupying winter quarters at 23d Street and Ridge Avenue in this city. A young female had been born at 2.30 A.M., March 9, 1880. The period of gestation was fixed at from 650 to 655 days, another corroboration by modern research of the statements of that accurate observer, Aristotle. This was the first circumstantial account of the pregnancy and delivery of an elephant and the article excited wide interest. It is, with the article on the placentation of the Kangaroo, published in the Proceedings of the Academy for 1881, the author's most important contribution to original research.3

³ "The observations of Prof. Chapman of America show that these bags

The observations of Prof. Chapman of America show that these bags [the yolk sacs and allantois] are all present in the Kangaroo, but that they are all small and arrested." W. Kitchen Parker On Mammalian Descent, p. 61. Referring again to Dr. Chapman's paper "On the Embryo of the Kangaroo," and to one by Dr. Osborn on the same subject, Prof. Parker remarks: "The two papers just mentioned might, literally, be folded up and packed inside a nut-shell; and yet, if I am not greatly mistaken, they let in more light upon the incoming of both the Metatheria and the Eutheria than anything that has gone before.

"Of course only the biological reader of such communications can value them."

[&]quot;Of course, only the biological reader of such communications can value them properly, as he only can thoroughly understand their meaning and their bearing; and yet the patient and thoughtful general reader may come at the gist of the matter." Parker, op. cit. p. 83.

He accompanied Leidy, Willcox, and Porter to the West in 1872, and had an opportunity of observing the work of naturalists in the field. He served as Dr. Leidy's assistant in the University from 1873 to 1876, and lectured there on anatomy and physiology.

The position of Coroner's Physician was held by him under Dr. Kingston Goddard and Dr. William Kent Gilbert from 1874 to 1880.

Dr. Chapman was married to Hannah Naglee Megargee, daughter of Samuel Megargee, December 2, 1876. The union, characterized by a community of social interests, was a most happy one. The Treatise on Human Physiology is affectionately dedicated by the author to his wife "as a small acknowledgment of the interest evinced and encouragement extended in its completion." Their summers were spent in Bar Harbor where, in 1886, the house was purchased which they named Mira Monte, and in which Dr. Chapman died. Here for nearly thirty years he pursued his studies of the flora and fauna of Mt. Desert island, the latter in a little laboratory on the water's edge. Here the fishermen, all his devoted friends, brought whatever of interest they succeeded in securing from the waters.

The material progress of his summer home and the welfare of its citizens, among whom he was universally popular, were to him matters of active concern. He endeavored in every way in his power to minimize the distinctions between the summer colony and the permanent residents. He took an active interest in the local library which he served as a Director.

He succeeded George W. Tryon, Jr., as a Curator of the Academy, August 8, 1876. He held the office only until the end of the following year. He was elected a member of the Council in 1880, but finding, after the lapse of four months, that his other engagements interfered with the discharge of his duties, he resigned. Again elected a Curator in 1891, to fill the vacancy caused by the death of Dr. Leidy, he acted as Chairman of the Board until the close of 1904, when he declined a renomination. During his term of office he coöperated earnestly with his associates in the establishment of desirable administrative reforms.

Having served as Demonstrator of Physiology in association with Dr. James Aitken Meigs in the Jefferson Medical College for the sessions of 1877 to 1880, he lectured on experimental physiology in the summer course of 1878 and was Curator of the Museum in 1879–80. He was given a second degree of Doctor of Medicine by the College in 1878, his thesis being on *Persistence of Forces in Biology*.

Dr. Meigs died November 9, 1879, shortly after beginning his course

of lectures for that term. At the request of the Board of Trustees it was continued and completed by Dr. Chapman. So acceptably was the engagement fulfilled that he was appointed by the Board to the vacant chair of Institutes of Medicine and Medical Jurisprudence in the spring of the following year. He secured from Paris as promptly as he could a collection of the most recent apparatus for physiological investigation. It was with the assistance of portions of this collection—Regnault and Reisert's instruments for the study of respiration and Helmolz's Ophthalmometer—that his fine papers on respiration and on the radius of the curve of the cornea were prepared, together with those on the general physiology of nerves and muscles, in conjunction with his assistant and successor in the chair, Dr. Albert P. Brubaker.

His introductory lecture to his first year's course was published by the Class. Considering the scope and purpose of physiology he dwells on the advantages of a study of pathology and insists on the importance of comparative anatomy, illustrating his position by reference to the action of the pancreatic juice in the beaver and the rabbit, the relation of the size of the brain to mental development in the lower animals, and to the nature of the bile as studied in *Doris*, one of the nudibranchiate mollusks. The limitations of the usefulness of vivisection in the prosecution of physiological research is frankly acknowledged, but the practical results secured up to that time were recounted and the opinion was expressed that, if vivisection should be banished from the laboratory, the physiologist would be deprived of one of his most fertile methods of research.

Dr. Chapman addressed the graduating class of the College in the Academy of Music, March 30, 1882, and again on April 2, 1890. On the latter occasion he advises the graduates to get married as soon as they can and dwells on the advantages to the young practitioner of the conjugal partnership. He considers the results of inductive and deductive reasoning, claims that the latter is essentially the feminine mode and assures his young hearers that matrimony will strengthen their inductive masculine minds.

He filled the chair in Jefferson College until the completion of last year's course when he resigned, with the intention of devoting his entire time to original research. His resignation was accepted with regret and he was made Emeritus Professor. His skill in adapting his physiological teaching to the practical needs of the physician was fully recognized by his students and associates in the Faculty. During the years of his connection with the College he never hesitated to express with characteristic frankness and force his views on questions

relating to the conduct of the school. The feeling entertained for him by his students was one of personal affection.

A memoir of his predecessor, prepared for the College of Physicians, was published in the *Transactions* and is a well-expressed appreciation of the work of Dr. Meigs as a teacher and of the value of his contributions to anthropological science.

While acting as demonstrator to Dr. Meigs, he was elected in 1878 to the Professorship of Physiology in the Pennsylvania College of Dental Surgery. He retained the position until 1885, when, desirous of giving undivided attention to his educational work in Jefferson College, he resigned. Here, as elsewhere, the force and originality of his teaching secured the attention and interest of his class, and his resignation was regarded as inflicting a loss on the institution.

Europe was again visited in 1882 and 1887. During a stay in Paris in 1899, he was presented to the Academy of Sciences and he made a communication before the Society of Biology on the placentation of the elephant. An abstract of his remarks was published in the Comptes Rendus of the Society, where also appeared, in 1903, some notes on the placentation of mammals in general.

His attention while in Paris was by no means confined to scientific interests, the vast storehouses of literature and art so liberally administered there for the benefit of the public receiving a full share of his attention. He visits the Bibliothèque Nationale to look at one of the two complete copies in existence of the Christianismi Restitutio of Michael Servetus. It is easy to believe that he was more attracted by the rarity of the volume than by its contents. He is also shown Charlemagne's Bible and those of most of the kings of France; the memoirs of Louis XIV, written by himself in the intervals of his intrigues; the Bible of Catherine de Medicis bound at a cost of 60,000 francs: the great Mazarin Bible; the autographs of Montaigne, Rabelais, Molière (the only one in existence); the first books of travel printed; lots of Caxtons, letters of Columbus, Vespucci, Cortez, Pizarro, and hundreds of other treasures in which he revels. He spent another pleasant day at the Observatory with Simon Newcomb, when, because of the presence of the distinguished American astronomer, the resources of the establishment were courteously displayed.

The History of the Discovery of the Circulation of the Blood was published in 1884. The essay was given as a lecture in Jefferson College the year before. It makes a small volume of fifty-six pages, but it is, from a literary point of view, the author's most satisfactory work, showing erudition, thoroughness of research and clearness of

statement. It forms, without much change, the 25th Chapter of the *Treatise on Human Physiology*, published in 1887, a second edition appearing in 1899.

A Manual of Medical Jurisprudence and Toxicology, designed, apparently, merely as an aid to the student in following the lectures, was published in 1892, subsequent editions appearing in 1896 and 1903.

He prepared an appreciative memoir of Dr. Joseph Leidy for the Academy in 1891. It is an adequate record of the work of his friend, to the value of whose encouragement and guidance he was always delighted to testify. Dr. Leidy's claims to public gratitude were again presented by him in an address delivered in the City Hall on the occasion of the dedication of Murray's statue of the great naturalist, October 30, 1907.

His paper on The Interpretation of Certain Verses of the First Chapter of Genesis in the Light of Paleontology was contributed to the Proceedings of the Academy in 1893. The article must be considered as a mere tour de force. It is not regarded as a contribution to our knowledge of the subject by either Biblical or Hebrew scholars, and is mainly interesting as illustrative of the range and diversity of Dr. Chapman's interests.

He was elected a member of the Board of Directors of the Library Company of Philadelphia, April 3, 1902. He took an active interest in the affairs of the Company, serving on the Book and Ridgway Branch Committees.

Again in Europe in 1902, he gave special attention to the collections in Florence under the guidance of Giglioli, the Director of the Museum, and to those of the Zoological Station of Naples, where he was cordially received by the late Prof. Dohrn, who assisted him in procuring for the Academy a fine collection of the invertebrates of the Bay of Naples. The specimens, prepared with the care characteristic of the Station, filled no less than 152 glass jars, and constitute a most valuable addition to the Museum, which had been enriched from time to time by the anatomical material of Dr. Chapman's studies, and by interesting collections from Bar Harbor.

A few months were spent in Paris in 1903, when he again addressed the Biological Society. He was back in Bar Harbor by the first of July. In 1905 he visited Egypt where he applied himself with characteristic energy to the study of hieroglyphics and Egyptian antiquities. He subsequently went to Rome and became intensely interested in the excavations of the Roman Forum. His devotion to this field of research continued unabated and he looked forward with eagerness

to pursuing his studies in the Eternal City when the resignation of his professorship would leave him in complete control of his time.

He was much gratified by the reception in June, 1908, of the degree of Doctor of Science from his *Alma Mater* in recognition of the value of his contributions to original research.

Elected a Fellow of the College of Physicians in 1880 he served on the Library Committee from January, 1891, to June, 1892. He was a member of the American Philosophical Society, the American Physiological Society, and the Franklin Institute; but he devoted much more time to the Academy and the Zoological Society than to the other institutions with which he was connected.

His last visit to the Academy was made a week before his departure for Bar Harbor. He was then in his usual exuberant spirits, with but little appearance of impaired health. Shortly after his arrival at his summer home he complained of severe pain, which was supposed to be intercostal neuralgia, but which, in connection with some difficulty in swallowing, was doubtless symptomatic of grave digestive disturbance. He was, however, able to attend to his many social duties, and to keep up his interest in the work of his laboratory until September 6th, when he was taken with a severe hemorrhage from the stomach, probably the effect of a gastric ulcer. A copious repetition of the flow of blood the following day resulted in his death. Mrs. Chapman survives him, childless.

The funeral exercises were held at Bar Harbor in St. Saviour's Church on the 10th of September. The body was brought to Philadelphia and buried in Laurel Hill Cemetery in the presence of a few relatives and intimate friends who had assembled at his residence, No. 2047 Walnut Street, a few blocks from where he was born.

The qualities which endeared Dr. Chapman to his schoolmates persisted throughout his life. He remained to the end a boy, with a cultivated mind, an unquenchable desire for the acquisition of knowledge, an intense enjoyment of life, and an unvarying self-possession, the result of success, appreciation, and inheritance. His sense of humor, his mental acuteness, his generosity, his sympathy with all human endeavor, his possession of what his friend Weir Mitchell finely calls "a boundless charity of attention," secured for him the affectionate regard of many with whom he could not be supposed to have much community of interest.

In most intellectual centres, and characterizing almost every generation, certain men become famous as the authors of well told stories, sparkling witticisms and apt repartee. They are frequently credited by tradition with much more of that sort of achievement than they were really responsible for. In this connection President Lincoln, Emory Storrs, William B. Travers, Sam Ward and Paul B. Goddard will be recalled as worthy successors of Tom Hood, Charles Lamb, Sydney Smith and other historic humorists. In this class Nathaniel Chapman was given a place by his own generation and his fame endures to the present day, not only as an excellent teacher, but also as a man of great personal charm, an exuberant vitality, and an acute sense of humor. These qualities, transmitted to the son, were inherited in full measure by the grandson, coming, indeed, from both father and mother. It would not be hard to quote Dr. Chapman as the author of many a dr ll story and many a witty saying, always to the point and without malice. These would, without doubt, add greatly to the interest of this essay, but they would manifestly be out of place on the present occasion as being irrelevant. One of his Bar Harbor friends tells of his having once dissected an oyster in his laboratory, several distinguished men of science being interested spectators. Without looking up, or interrupting the manipulation of his scalpel for an instant, he told a story which was greeted with roars of laughter. This was an experience quite familiar to those associated with Dr. Chapman in his most serious scientific work, the character of which was not, however, damaged by his joyous interludes. It must be fresh in the recollection of many Academicians how the old library hall would ring with hilarity on the occasions of his frequent visits.

Nothing that was human was foreign to him; he was on good terms with all types of mankind except the Bore and the Sham. He would, not unlikely, eat an abstemious lunch with Madame Bubble, but he would certainly not devote a minute to the young woman whose name was Dull. He might exchange opinions, if time permitted, with Mr. Worldliwise, but he would frankly tell Mr. Facingbothways how he regarded him, without thinking it worth while to wait for an answer. As has been said of another, "it was his good fortune to be a man of the world without being frivolous, and a man of science, without being pedantic."

Although Dr. Chapman's mental equipment was entirely devoid of any recognition of authority except that which appealed to his reason within the bounds of what he himself recognized as its limitations, he was unalterably attached to the traditions and routine which had, actively or passively, moulded his character, and he was as intolerant as a Covenanter when his prejudices were combatted. In

his reply to Dr. Horatio C. Wood's paper on medical education, published at the beginning of the movement which has been productive of such good results in the elevation of the medical profession, he quotes approvingly Huxley's statement concerning the men who had gone up for examination in the University of London, that he had been struck with "the singular unreality of their knowledge of physiology." He deprecates Dr. Wood's laudation of the courses of instruction in Europe as contrasted with our own: "To establish in this country a University of the German kind, we would first require to have their gymnasia, then their primary schools, then more taxation to support them, a national priesthood to regulate the ideas of the faculty, and finally a standing army to keep the dissatisfied quiet. A medical education is a good thing, but the privilege of saying what we please, doing what we like, and spending our money as suits us best, is better. If any American physician will give his lifetime to the study of a specialty, and will lecture on that, and that alone, I have no doubt he can make, like the German professor, a reputation and a living—if he chooses to live like one."

Years after, in considering the proposed act of the Legislature regulating the practice of medicine and surgery, he gives his reasons for believing that such an attempt would be rather to lower than to elevate the standard of medical education in the Commonwealth. Such opinions were expressed with a vigor and point which, while they might fail to convince, certainly relieved his printed arguments from dulness.

Possessed of a wonderfully retentive memory he was always able to illustrate his point of view and enforce his arguments by apt references and quotations characterized by incisiveness and force. While ardently devoted to scientific investigation, he was attentive to his many social obligations; but if either had to be held in abeyance, his work had always the precedence, a fact amply demonstrated by the varied and extensive results of his industry, as recorded in the accompanying bibliography. The value of his contributions to science was recognized on his retirement by the Carnegie Foundation for the Advancement of Teaching.

It is fitting that Dr. Chapman should be remembered as a devoted student of science who contributed liberally to the resources of the Academy and was always active in advancing its interests at home and abroad. He will dwell in the regard of his fellow members as a genial associate, an intellectual stimulus, and a loyal friend.

BIBLIOGRAPHY.

Evolution of Life. Philadelphia, 1873, pp. i-vi, 7-193.
Criticism on an observation of Professor Thomson on certain Sponges, etc.
American Naturalist VII, 1873, pp. 485, 486.
On a species of Delphinus. Proc. A. N. S. P., 1873, pp. 279, 280.

Disposition of flexor perforans, flexor longus hallucis and flexor accessorius in

Paradoxurus musanga Gray. Proc. A. N. S. P., 1873, p. 372.

On the muscles of the hind leg of Fiber zibethicus. Proc. A. N. S. P., 1874, p. 13.

On Echinorhynchus moniliformis. Proc. A. N. S. P., 1874, p. 76.

On the generative apparatus of the Tebennophorus carolinensis. Proc. A. N. S. P., 1874, pp. 79, 80.

Disposition of the latissimus dorsi, etc., in Atcles geoffroyi Kuhl, and Macacus rhesus Desm. Proc. A. N. S. P., 1874, p. 94, plate XIII.

Flexor brevis digitorum in Ateles geoffroyi (Rube). Proc. A. N. S. P., 1874,

Rete mirabile in Bradypus didactylus. Proc. A. N. S. P., 1874, p. 95.

On what was found in the alimentary canal of Lucioperca. Medical Times, January 3, 1874.

The distribution of nerves in reference to neurotomy. Medical Times, January 24, 1874.

On the disposition of the great omentum in Cynocephalus porcarius, etc. Proc. A. N. S. P., 1875, p. 123.

On Trichocephalus affinis Dies. Proc. A. N. S. P., 1875, p. 440.

On the castor glands of the Beaver. Proc. A. N. S. P., 1875, p. 440.
On the anatomy of the Giraffe. Proc. A. N. S. P., 1875, p. 401.
Post-mortem examination of an Elephant. Proc. A. N. S. P., 1875, p. 402.
Observations on the structure of the Manatee. Proc. A. N. S. P., 1875, pp.

452–462, plate XXVI.

On Medical Education. Pp. 1–13, Philadelphia, 1876.

Description of a new Taenia from Rhea americana. Proc. A. N. S. P., 1876, p. 14.

Description of a monstrosity. Proc. A. N. S. P., 1876, pp. 24–26.

A lecture upon the explanation of anomalies of the circulatory apparatus, etc. Medical Times, April 1, 1876.

The comparative anatomy and physiology of the placenta. Obstetrical Journ.

of G. B. and I., Am. Suppl., March, 1876.
On the Giraffe. Proc. A. N. S. P., 1877, pp. 37, 38.
On the cæcum of Capybara. Proc. A. N. S. P., 1877, p. 146.
On reflex action in Turtles. Proc. A. N. S. P., 1877, p. 146.
On the placenta of a Monkey. Proc. A. N. S. P., 1877, p. 14.
On the structure of the Gorilla. Proc. A. N. S. P., 1878, pp. 385–394, plates

III-VI.

On the structure of the Chimpanzee. Proc. A. N. S. P., 1879, pp. 52-63, plates IX-XII.

Notes on Amphiuma. Proc. A. N. S. P., 1879, pp. 144, 145. Placenta of Macacus cynomolgus. Proc., A. N. S. P., 1879, pp. 146, 147.

On the placentation and generative apparatus of the Elephant. Journ. A. N. S. P., 2d ser., VIII, 1874–1881, pp. 413–422, plates XLVIII-L. On the structure of the Orang Outang. Proc. A. N. S. P., 1880, pp. 160–175, plates XI–XVII.

Lecture introductory to the Course of Jefferson Medical College for the Session

1880-81, delivered October 3, 1880, pp. 1-20. Philadelphia, 1880.

Memoir of James Aitken Meigs, M.D. Trans, College of Physicians of Philadelphia, 3d Ser., V, pp. CXVII-CXXXIII, Philadelphia, 1880.

Observations on the Hippopotamus. Proc. A. N. S. P., 1881, pp. 126-148, plates XI-XVI.

On a feetal Kangaroo and its membranes. Proc. A. N. S. P., 1881, pp. 468-471, plate XX.

Address to the Graduating Class of the Jefferson Medical College, 57th Annual Commencement, March 30, 1882, pp. 1-10, Philadelphia, 1882.

History of the discovery of the circulation of the blood. Pp. 1-56, Philadelphia, 1884.

Notes on the anatomy of Echidna hystrix. Proc. A. N. S. P., 1887, pp. 334-335, plates, XIX, XX,

Notes on the anatomy of the Indian Elephant. I: Some observations on the brain. Journal Comp. Med. and Surg., VIII, April, 1887.

Treatise on human physiology for the use of students and practitioners of medicine. Pp. 1–945. Philadelphia, 1887. Second Edition. Pp. 1–924, Philadelphia, 1899.

Address to the Graduating Class of the Jefferson Medical College, April 2, 1890. College and Clinical Record, XI, May, 1890.

Observations on the female generative apparatus of Hyæna erocuta. Proc. A. N. S. P., 1888, pp. 189-191. Plates IX-XI. Researches upon the general physiology of nerves and muscles, No. I. (In collaboration with Dr. Albert P. Brubaker). Proc. A. N. S. P., 1888, pp. 106-112. Same, No. II. (In collaboration with Dr. Albert P. Brubaker.) Proc. A. N. S. P., 1888, pp. 155-161.

Researches on respiration, No. 1. (In collaboration with Dr. Albert P. Brubaker.) Proc. A. N. S. P., 1891, pp. 13–44, Plates I–III.

Food and energy in its relation to medicine. Diatetic Gazette, Nov. 1899, pp. 1-3. Memoir of Joseph Leidy, M.D., LL.D., Proc. A. N. S. P., 1891, pp. 342-388. Portrait.

Observations on the brain of the Gorilla. Proc. A. N. S. P., 1892, pp. 203-212, Plates XI-XIII.

Note on the geology of Mt. Desert Island. Proc. A. N. S. P., 1892, p. 350.

A Manual of medical jurisprudence and toxicology. Pp. 1-237, Philadelphia,

Second edition. Pp. 1–254, Philadelphia, 1896. Third edition. Pp. 1–329, Philadelphia, 1903.

The interpretation of certain verses of the first chapter of Genesis in the light of paleontology. Proc. A. N. S. P., 1893, pp. 68-74.

Notes on Cheropsis liberiensis Morton. Proc. A. N. S. P., 1893, pp. 185-187,

Plate IV. Observations on the Japanese Salamander (Cryptobranchus maximus (Schlegel), Proc. A. N. S. P., 1893, pp. 227–233, Plates V, VI, VII.

The radius of the curve of the cornea. (In collaboration with Dr. Albert P. Brubaker.) Proc. A. N. S. P., 1893, pp. 349–361.

Strictures on proposed act to regulate the practice of medicine and surgery.

(Privately printed.)
Homologies of the alisphenoid and petromastoid bones in Vertebrates. Proc.

A. N. S. P., 1894, pp. 32-52.

Note on the Squid. Proc. A. N. S. P., 1898, p. 202.
La gestation et la placentation de l'Elephant (Elephas asiaticus). Comptes Rend. hebd. de la Soc. de Biol. Paris, II^e. Ser., I, 1899, pp. 525, 526.
Respiratory quotient and loss in volume of expired air. Proc. A. N. S. P., 1900, p. 379.

Observations on the anatomy of Hylobates leuciscus and Chiromys madagar-

cariensis. Proc. A. N. S. P., 1900, pp. 414-423.

Observations on the placenta and young of Dasypus sexcinctus. Proc. A. N. S. P., 1901, pp. 366-369, Plate XVIII.

Observations on Galeopithicus volans. Proc A. N. S. P., 1902, pp. 241–254, Plates X-XII.

On a collection of Anthropoids. Proc. A. N. S. P., 1903, p. 719.

On a confection of Antinopolas. The results of the Sur la form de placenta de plusieurs mammifères. Comptes Rendus hebd. de la Soc. de Biol. Paris, LV, 1903, pp. 801, 802.

Observations upon a collection of Antiropold Apes presented by T. Biddle, Nov.

3, 1903 (Privately printed). Pp. 1-9.

Observations on Tupaia, with reflections on the origin of Primates. Proc. A. N. S. P., 1904, pp. 148-156, Plates IX, X.

Observations on Hyrax. Proc. A. N. S. P., 1904, pp. 476-480.

Address on the life and work of Joseph Leidy. (Privately printed.) Pp. 1-8

(1907) with portrait.

Life and work of Joseph Leidy. Science, N. S., XXVI, 1907.